

14. An isolated, recombinant, Lamiaceae, geranyl diphosphate synthase large subunit protein of Claim 10.

15. An isolated, recombinant, *Mentha* geranyl diphosphate synthase large subunit protein of Claim 10.

16. An isolated, recombinant, *Mentha piperita* geranyl diphosphate synthase large subunit protein of Claim 10.

17. An isolated, recombinant, *Mentha piperita* geranyl diphosphate synthase large subunit protein consisting of the amino acid sequence set forth in SEQ ID NO:2.

18. An isolated, recombinant geranyl diphosphate synthase protein comprising an isolated, recombinant geranyl diphosphate synthase large subunit protein and an isolated, recombinant geranyl diphosphate synthase small subunit protein.

33. A method of imparting or enhancing the production of geranyl diphosphate synthase in a host cell comprising introducing into the host cell an isolated, recombinant geranyl diphosphate synthase large subunit protein.

34. A method of treating cancer in a mammalian host comprising introducing into a cancerous cell a geranyl diphosphate synthase large subunit protein, a geranyl diphosphate synthase small subunit protein and a monoterpene synthase protein, said monoterpene synthase protein being capable of converting geranyl diphosphate to a monoterpene having anti-cancer properties.

35. The method of Claim 34 wherein said geranyl diphosphate synthase small subunit protein is from an essential oil plant species, said geranyl diphosphate synthase large subunit protein is from a plant species of the family Lamiaceae, and said monoterpene synthase is limonene synthase.

36. The method of Claim 34 wherein said geranyl diphosphate synthase small subunit protein and said geranyl diphosphate synthase large subunit protein are both from a plant species of the family Lamiaceae, and said monoterpene synthase is limonene synthase.

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37. The method of Claim 34 wherein said geranyl diphosphate synthase small subunit protein and said geranyl diphosphate synthase large subunit protein are both from a *Mentha* species and said monoterpene synthase is limonene synthase.

38. A method of treating cancer in a mammalian host comprising introducing into a cancerous cell a nucleic acid sequence encoding a geranyl diphosphate synthase large subunit protein, a nucleic acid sequence encoding a geranyl diphosphate synthase small subunit protein, and a nucleotide sequence encoding a monoterpene synthase protein, under conditions that enable expression of said large subunit, small subunit and monoterpene synthase proteins, said monoterpene synthase protein being capable of converting geranyl diphosphate to a monoterpene having anticancer properties.

39. The method of Claim 38 wherein said geranyl diphosphate synthase small subunit protein and said geranyl diphosphate synthase large subunit protein are both from a plant species of the family Lamiaceae, and said monoterpene synthase is limonene synthase.

40. The method of Claim 38 wherein said geranyl diphosphate synthase small subunit protein and said geranyl diphosphate synthase large subunit protein are both from a *Mentha* species and said monoterpene synthase is limonene synthase.